Agreement between the Danish Government (the Social Democratic Party), Venstre - the Liberal Party of Denmark, the Danish People's Party, the Danish Social Liberal Party, the Socialist People's Party, Enhedslisten, the Conservative People's Party, Liberal Alliance and The Alternative – regarding

A Road Map for the Capture, Transport and Storage of CO_2

The second part of a complete CCS strategy

14 December 2021

The Danish Government (the Social Democratic Party), Venstre – the Liberal Party of Denmark, the Danish People's Party, the Danish Social Liberal Party, the Socialist People's Party, Enhedslisten, the Conservative People's Party, Liberal Alliance and The Alternative have come together on an agreement to roll out CO_2-capture and transport, which will contribute to reducing greenhouse gas emissions.

The agreement is the next stage of the Government's CCS Strategy and builds on the previous CO_2 Storage Agreement from June of 2021; cf. *Annex 1*. The agreement will be followed later this year by a Power-to-X strategy that will touch on how PtX products, including those containing CO_2, can contribute to phasing out fossil fuels in a number of sectors.
The agreement will pave the way for Denmark to assume global leadership in the capture, storage and use of CO_2. With this agreement, we are taking the first step towards a completely new type of infrastructure for the capture and transport of CO_2 in Denmark, which is crucial for Denmark to achieve climate neutrality by 2050. The agreement also paves the way for commercial and technology development in Denmark in the coming years, which will be in high demand globally. The agreement will pursue the goal of the original climate agreement on energy and industry etc. from June of 2020 on a comprehensive strategy for CO_2-capture, storage and utilisation (CCUS) and PtX in Denmark. The agreement should be seen in the context of the Green sub-Agreement to the Finance Act of 2022, which is expected to lead to a reduction of an additional 0.5 million tons of CO_2 from e.g. CO_2 capture and storage. Overall, this agreement and the Green sub-Agreement support the overall strategy and thus the dissemination of green solutions of the future.

With the Climate Agreement for Energy and Industry from June of 2020, we decided to invest massively in solutions that can capture CO_2 in such things as chimneys and then pump it back into the ground where it came from or recycle it into biofuels. We decided to set aside a market-based pool of DKK 16 billion to capture, utilise and store CO_2 starting in 2024 to achieve CO_2 reductions of 0.4 million tons in 2025 and 0.9 million tons by 2030. This agreement established the principles for implementing and realising the agreed reductions. The Government's 2021 Climate Programme also describes the technical potential for CCS of up to a further 8 million tons, about a third of which comes from fossil fuels and industrial processes. With this agreement and the Finance Act of 2022, funds have been allocated to capture at least 1.4 million tons of CO_2 by 2030. Our ambition is for CCS to deliver higher reductions by optimising the implementation of the pool and other initiatives. In this context, work on green tax reforms is expected to support the spread of CCS in Denmark.

This agreement thus takes a significant step towards reaching Denmark's climate goals for 2025 and 2030 and the establishment of full-scale CO_2-capture and storage in Denmark. The capture and storage of CO_2 are continuously being used to increase oil extraction around the world. In Denmark, CCS should not be a means of getting more oil and gas out of the North Sea. CCS will be used to reduce some of the emissions that are otherwise difficult to bring down and contribute with negative emissions. It is therefore not an expression of diminished ambitions in relation to the Green Shift. In its latest report of August 2021, the UN Panel on Climate Change (IPCC) stresses how – in all the scenarios aimed at limiting global temperature rise to below 1.5-2.0 °C – they point out that it is necessary to remove CO_2 from the atmosphere to compensate for anthropogenic emissions. The need for such so-called negative emissions is supported by Denmark's Climatic Act.

The parties to the agreement have agreed on the following specific initiatives:

Long-term regulation to roll out CCS on market-based terms
The parties have agreed that CCS technology should be rolled out on market-based terms through the following initiatives:

- **Market-based deployment through taxes and expenditures for quota purchases:** The parties want a market-based unrolling of CCS in the long term. This has to be seen in the context of increased private financial incentives through, among other things, duties, taxes and quotas.

- **Promotion of negative emissions through negative duties or subsidies:** The parties have agreed that negative emissions can be promoted through negative duties or subsidies. The parties have agreed to revisit this idea in the context of discussions on a more uniform CO_2e-regulation, based on recommendations from the Green Tax Reform Expert Group. The parties have also noted that the Danish Council on Climate Change recommends that a political decision be taken on whether negative emissions count towards the Danish CO_2 accounting, even if it is stored abroad. At the same time, the parties noted that it is not yet possible to report all types of negative emissions in accordance with current UN rules. However, the need for negative emissions has been pointed out by the UN Climate Change Panel (IPCC). The parties expect that - in the long term – it will be possible to include all types of negative emissions, and therefore agree to include negative emissions in the Danish effort independently of type and where it is stored, see the comments on the Climate Act[1] and in line with the Danish Council on Climate Change's recommendations.

- **Promoting CCS through EU regulation:** The parties agree to strengthen CCS at the international level and promote negative emissions via CCS by developing a pan-European certification system for CO_2-uptake, which can eventually be linked with better incentives through the EU quota trading system.

- **Research:** The parties agree to continue investing in research into the capture, storage and utilisation of CO_2. DKK 700 million was allocated in 2021 (DKK 295 million in 2022) for four green research missions, including one on the capture and storage or utilisation of CO_2. The money has been set aside as part of the recent agreements in the past two years to distribute research reserves.

- **Development of Denmark as a European hub for CO_2 storage:** The parties agree to strengthen Denmark's role as a European hub for storing CO_2 so imports of CO_2 can be promoted; see the Agreement in Principle on CO_2 Storage from June of 2021. A Danish position

[1]The Climate Act's targets include Denmark's total greenhouse gas emissions including carbon capture/emissions from soil and forest (LULUCF), *negative emissions from technological processes (e.g. storage of CO2 underground)* and indirect CO2 emissions (substances later converted into CO2 in the atmosphere). The targets do not include emissions from international shipping and aviation.

of strength within CO_2-storage will allow us to facilitate reductions outside Denmark's borders **and** support the transition from jobs in the oil and gas sector to new, greener jobs in CCS. The legislative and administrative processes for importing/exporting and storing CO_2 should support this ambition.

- **Promotion of capture technologies within Direct Air Capture (DAC):** The parties agree to promote DAC technologies. DAC combined with CO_2 storage can contribute with negative emissions. The parties note that the Government is initiating an analysis of the framework conditions for the promotion of DAC technologies and making them more affordable. The captured CO_2 could also be used in carbon-based fuels produced via PtX

Promotion of CCS in the short term
The parties agree to simultaneously promote CCS in the short term through the following initiatives:

Implementation of the CCUS subsidy pool
The parties agree that the subsidy pool is to be divided into two phases. The first phase aims to realise CO_2 reductions of 0.4 million tons annually starting in 2025. This agreement will only decide on implementation during the first phase of the pool. In the second phase, experience from the first implementation and market developments are expected to contribute to the best possible implementation of the reductions (0.9 million tons per year) by 2030. Based on a government analysis, the parties will be involved in the second phase of implementation by the first half of 2023, when it will include how the pool can support the deployment of the technologies for the capture, storage and utilisation of CO_2 while contributing with the agreed reductions.

At the same time, the parties agree that the funds should contribute to establishing a single chain of values for capture, transport, storage and utilisation that can contribute to reductions.

For the first implementation of the pool by 2025, CO_2 storage will contribute most to the anticipated national reductions of 0.4 million tons of CO_2. The funds will therefore in the first phase be granted to capture operators who subsequently purchase transport and storage. The funds will have to cover the costs of CCS at all stages of the value chain from capture to storage. It is expected that the supplier of transport and storage capacity will be chosen in 2023. It is estimated that just over half of the funds will go to capture, as the cost here is highest, while just under half of the funds will go to transport and storage. The approach is expected to underpin market-based dissemination of the technology. The funds will be granted per reduced ton of CO_2. The funds will be adjusted for the development of CO_2-duties, including any negative duties or charges for negative emissions which will be offset against the amount of the subsidy. Similarly, the development of the quota price will be taken into account when determining the amount of financial support. At the same time, the Government will establish criteria that support competition in supply. At the same time, it will be a requirement that the beneficiaries have sufficient financial and technical capacity to deliver the expected reductions in environmental and safety terms. The detailed arrangement of funding is determined in cooperation between relevant ministries in a negotiation or market dialogue with the interested operators that receive funding. The Conciliation Circle is regularly informed on the status of this.

The parties note that objective criteria must be established in the implementation of the CCUS subsidiaries pool to ensure that the long-term use of sustainable biomass in electricity and district heating supply is taken into account. The implementation of the CCUS pool shall not give rise to new or extended investments in biomass-based combustion that do not support the appropriate and sustainable use of biomass in electricity and district heating supply.

At the same time, the parties note that the terms for receiving funds for the period are set during negotiations between the State and relevant beneficiaries through a so-called Open Book approach, where the funds can be optimised to maximise the impact the funds have. The Open Book principle means that negotiations take place with full transparency of the bidder/tenderer's cost structure and preferences, and with full transparency over the bidder's criteria for success and negotiations.

The parties also see excellent prospects in the use of CO_2 and, in the context of the PtX strategy and other implementations of the CCUS pool, the parties will look at how the use of CO_2 can help us reach our climate goals. The parties note that the publication Global Reporting will look at the development of a method to measure the impact of CCU on global emissions.

The parties are generally focused on Denmark being successful in becoming a leader in hydrogen and PtX. The first steps have been taken with a number of PtX initiatives, including e.g. IPCEI and green research strategy. The PtX strategy, which is at the top of the previous initiatives, will help create a clear and ambitious framework for PtX. Based on the PtX strategy, the Government will convene negotiations with the agreement group behind the Climate Agreement for Energy and Industry etc. of June 2020, where measures to support CCU will also be negotiated. At the same time, in the context of the second implementation of the CCUS pool by the first half of 2023, the parties will look at how the use of CO_2 can help Denmark reach its climate goals.

The parties also agree on the need to develop Danish storage capacity, as this could potentially lead to the development of new green jobs. The parties agree that all permit programmes in relation to CO_2-storage must be ready in time for Danish storage to be possible in 2025, so that Danish storage capacity can be a potential buyer of captured CO_2 in the first implementation of the CCUS pool. The parties agree on a fast and flexible procedure and that the Conciliation Circle is kept regularly informed of the progress made.

This means, in specific terms, that it will be possible to apply for permits for pilot and demo projects for CO_2 storage of (geological storage of CO_2 of less than 100 kilotons for research, development or testing of new products and processes) in the North Sea as of 01 July 2022, if it is considered safe and environmentally justifiable.

With reference to the Agreement in Principle for CO_2-storage of 30 June 2021, the parties note that the process for granting permits for CO_2-storage in the Danish subsoil in the North Sea has been initiated.

The parties note that the Minister for Climate, Energy and Utilities will allow applications for CO_2-storage in the North Sea by the end of 2022, so that storage can take place as early as 2025, if it is considered safe and environmentally justifiable. The parties support this timetable; see *Annex 2*.

The parties agree to discuss possible additional support for Danish CO_2-storage sites in 2022 in the context of political negotiations on the State's possible participation in CO_2-storage projects. In this context, and in line with the Agreement in Principle for CO_2 storage of 30 June 2020, the parties will also discuss how to secure any state proceeds from CO_2-storage, as well as various models for this.

Clear authorisation for CO_2-capture at waste incineration and biomass plants
Most waste incineration facilities and individual biomass plants with the potential for CO_2-capture are municipally owned. There is a need to ensure that municipalities have a clear legal basis to participate in specific activities such as CO_2-capture. The parties therefore agree that municipal operators should have a clear legal basis for building and operating CO_2-capture facilities at waste incineration and biomass plants. The Government will present a specific model for this in 2022. The model shall support that costs for CCS installations are not passed on to heat and waste consumers while supporting a green, efficient and safe supply sector. CO_2-capture at waste incinerators must be seen in the context of the Climate Plan for a Green Waste Sector and Circular Economy. The CCUS pool is also organized in such a way that municipally-owned waste incinerators and biomass plants can also apply for the first implementation.

Development of infrastructures for and transport of CO_2
Transport and intermediate storage are a necessary link in the CCS value chain and thus also a necessary condition for creating reductions via CCS. One important first step in building a cost-effective infrastructure for transporting and intermediate storage of CO_2 is to examine the need and costs for building or using such infrastructures in the different geographical clusters. The parties therefore agree to set up cluster collaborations (in Copenhagen, Aalborg, Aarhus, Esbjerg, Fredericia and Odense) as well as possibly other major Danish cities – each of which will be tasked with exploring the opportunities, needs and costs for establishing such infrastructures. In this context, the parties agree that establishing and operating pipeline infrastructures will be discussed in the relevant cluster cooperations in 2022.

The parties also support the Government's allocation of DKK 190 million to the development of local value chains for CO_2-capture, utilisation and storage from the Fair Transition Fund, e.g. in North Jutland, which has been designated by the European Commission as a possible region in Denmark that is eligible for support. The aim is to accelerate the establishment of the necessary infrastructure for CCUS. The parties note that the funding requires approval by the European Commission of Denmark's national programme for the Fair Transition Fund.

Dialogue and involvement
The parties note that the Government is setting up a stakeholder forum for CCUS via the Ministry of

Climate, Energy and Utilities, inviting all interested authorities, companies, knowledge institutions, financial institutions and interest groups etc. Among other things, the forum will support the retention and development of green *Danish* jobs with a technology-neutral and market-based focus.

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The agreement is designed as a voting agreement. The parties note that the agreement forms the second part of the strategy for the capture and storage of CO_2. At the end of the year, the Government will present a PtX strategy that will address the utilisation of CO_2 to develop of PtX products.

The parties note that the Minister for Climate, Energy and Utilities will initiate ongoing discussions in which the status and progress of the CCS strategy efforts and for the permit process can be discussed. The parties also note that the Government will present a proposal for the second phase of the CCUS pool at a later date, with a view to achieving the anticipated reduction of 0.9 million tons of CO_2 by 2030.

Annex 1

Agreement in Principle between the Government (the Social Democratatic Party), Venstrethe Liberal Party of Denmark, the Danish People's Party, the Danish Social Liberal Party, the Socialist People's Party, Enhedslisten, Conservative People's Party, Liberal Alliance and The Alternative

A Road Map for the storage of CO_2

The first part of a complete CCS strategy

30 June 2021

The Danish Government (the Social Democratic Party), Venstre – the Liberal Party of Denmark, the Danish People's Party, the Danish Social Liberal Party, the Socialist People's Party, Enhedslisten, the Conservative People's Party, Liberal Alliance and The Alternative have agreed on the following principles for the storage of CO_2 in Denmark:

- A basis must be created for safe and environmentally sound storage of CO_2 below ground.
- Denmark must be able to import and export CO_2 to and from abroad
- Further studies on new storage sites in Denmark are to be initiated.

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The parties note that the UN Climate Change Panel (IPCC), the International Energy Agency (IEA) and the Danish Council on Climate Change state that CCS is a key instrument for mitigating climate change. Carbon capture and storage (CCS) is a well-known technology where CO_2 is captured from flue gases or air, transported to and subsequently stored in suitable geological structures about 1-2 km underground.

The parties support the fact that CCS plays an important role in meeting national climate goals, CCS technology can help reduce emissions that are otherwise difficult to reduce in other ways. CCS can also be used to create negative emissions. In addition, analyses from GEUS show that the Danish subsoil is particularly suitable for storing CO_2, and by 2030 they expect an increasing demand for CO_2-storage capacity in northern Europe.

However, there are currently no CO_2-storage sites in Denmark, so specific initiatives are therefore needed.

Safe and environmentally sound storage

The parties agree that CO_2-storage must be safe and environmentally justifiable. The parties state that the precondition for this is the start of the process of granting permits for CO_2-storage in the Danish subsoil in the North Sea, so storage can take place as early as 2025.
At the same time, the parties stress that permits for CO_2-storage will not be a means of obtaining more oil and gas from the North Sea.

The parties note that the Government will have a report prepared on international experience from CCS in terms of safety, nature and the environment.

The parties note that before opening CO_2 storage permit applications, the Minister for Climate, Energy and Utilities will determine among contractors/bidders how to avoid storage operators controlling large areas of the North Sea, as well as whether any state revenue can be secured for the exploitation of underground storage capacity.

The parties also note that the Minister for Climate, Energy and Utilities will present a statement for the KEF Committee on which areas/blocks are to be offered, including general conditions (application

procedures, work obligations, monitoring requirements, collateral, guarantees, model permits, requirements concerning technical and financial capacity etc.).

The parties also consider that the storage of CO_2 should be developed and operated as far as possible on commercial terms.

Possibility of importing and exporting CO_2
The parties agree that Denmark should be able to import and export CO_2 to-and-from abroad.
The parties note that this requires the removal of a number of regulatory barriers. The parties to the agreement therefore agree to accede to the amendment of the London Protocol and the amendment of the Marine Environment Act (presented in November of 2021) to allow the import and export of CO_2 with selected countries.

The parties also support the Government's work on concluding bilateral agreements on the transport of CO_2 across national borders. The parties agree that agreements can be concluded with countries that, like Denmark, will use CCS as a means of reducing emissions that are otherwise difficult to reduce and to achieve negative emissions.

Maturing of additional storage options in Denmark
The parties agree to initiate studies on potential storage sites in the Danish subsoil.

The parties agree that all relevant storage options should be examined and that the current agreement does not address where storage sites should be placed. The parties have stressed the importance of relevant municipalities, regions and citizens being involved before initiating studies on specific areas.

The parties note that a follow-up group of potential storage operators will be set up to support further work on the investigations. This will allow the oil and gas sector to contribute with its many years of experience in interpreting data and hands-on experience in operating wells underground. The parties also attach importance to the free availability of collected underground data, including for purposes other than CO_2-storage.

The nature and economics of the agreement
Mapping potential CO_2-storage sites entails government expenditures totalling DKK 210 million in 2022-24. The parties agree that funding can be made through research reserves, as this is part of the implementation of the CCUS mission in the Green Research Strategy. Regarding research reserves for 2022, we therefore propose DKK 85 million in 2022, DKK 115 million in 2023 and DKK 10 million in 2024 for GEUS, which will be negotiated as part of the distribution of the total reserve in the autumn.

The parties also note that the agreement forms the first part of a strategy for the capture and storage of CO_2. After the summer recess, the Government will prepare a paper for the next part(s) of the strategy, including the implementation of the CCUS pool of DKK 16 billion from the Climate Agreement for Energy and Industry etc. 2020. In that connection, the agreement participants will discuss how Danish

work on CO_2-capture and storage can take into account that CO_2 can be stored underground and used for the development of PtX products which can contribute to such things as interoperability of shipping and aviation in the use of fossil fuels with a thought to CO_2 reductions.

Annex 2

TIME SCHEDULE FOR CCS UNTIL 2025